Nutrient Management Implementation Work Groups

- Using the SnapPlus16 SnapMaps, Cropping Grid, Easy Group Builder (UW)
- Proposed NM Checklist for the 2015 – 590 NM Std. (DATCP)
- Updating NM Plans: UW-Extension yield potential designations, NRCS soil erosion calculations, and impacts to NM planning (All)
- Additional discussion of nutrient management implementation issues (All)
- When SnapPlus V2 2016 is released the interactive maps will be gone.

SnapPlus

Wisconsin's Nutrient Management Software

2016 Farmer Training Binders

NPM
Nutrient and Pest Management Program

SnapPlus Farmer Training binders are available for ordering and will be shipped December 2016. A separate 'trainer' packet is also available. Submit requests by:

September 23, 2016

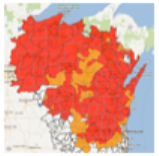
Please note that orders exceeding 40 binders may incur an added charge. Binders are provided for farmer training free of cost, but while ordering please keep in mind that they are costly to produce. Also, if you need to have your binders prior to December, please let us know, and we will try to accommodate. Please email the NPM Program with your request at **mbroeske@wisc.edu**

Wisconsin Manure Management Advisory System

The Manure Management Advisory System is a set of applications and maps to help farmers and others who apply nutrients to identify suitable cropland areas for spreading. The maps are in two categories: Short-term runoff risk assessment, for daily application planning, and WI 590 nutrient management, for long-term application planning.

Site News: Click here for updates about MMAS.

For Daily Application Planning:



Runoff Risk Advisory Forecast

RRAF Basin Forecast for Mobile Devices

For WI 590 Nutrient Management Planning:

Interactive/Online 590 Restriction Maps

DATCP GIS Files and Web Services
for 590 Restriction Map Data

Goals of the Runoff Risk Forecast Tool

- Increase information available to producers to make decisions about when and where to spread on a given day
- Identify and alert nutrient applicators of days in which the risk of runoff is high
- Use **existing** weather/rainfall/snowfall models from NOAA to determine level of risk
- Use **actual on-farm/research data** to calibrate model data

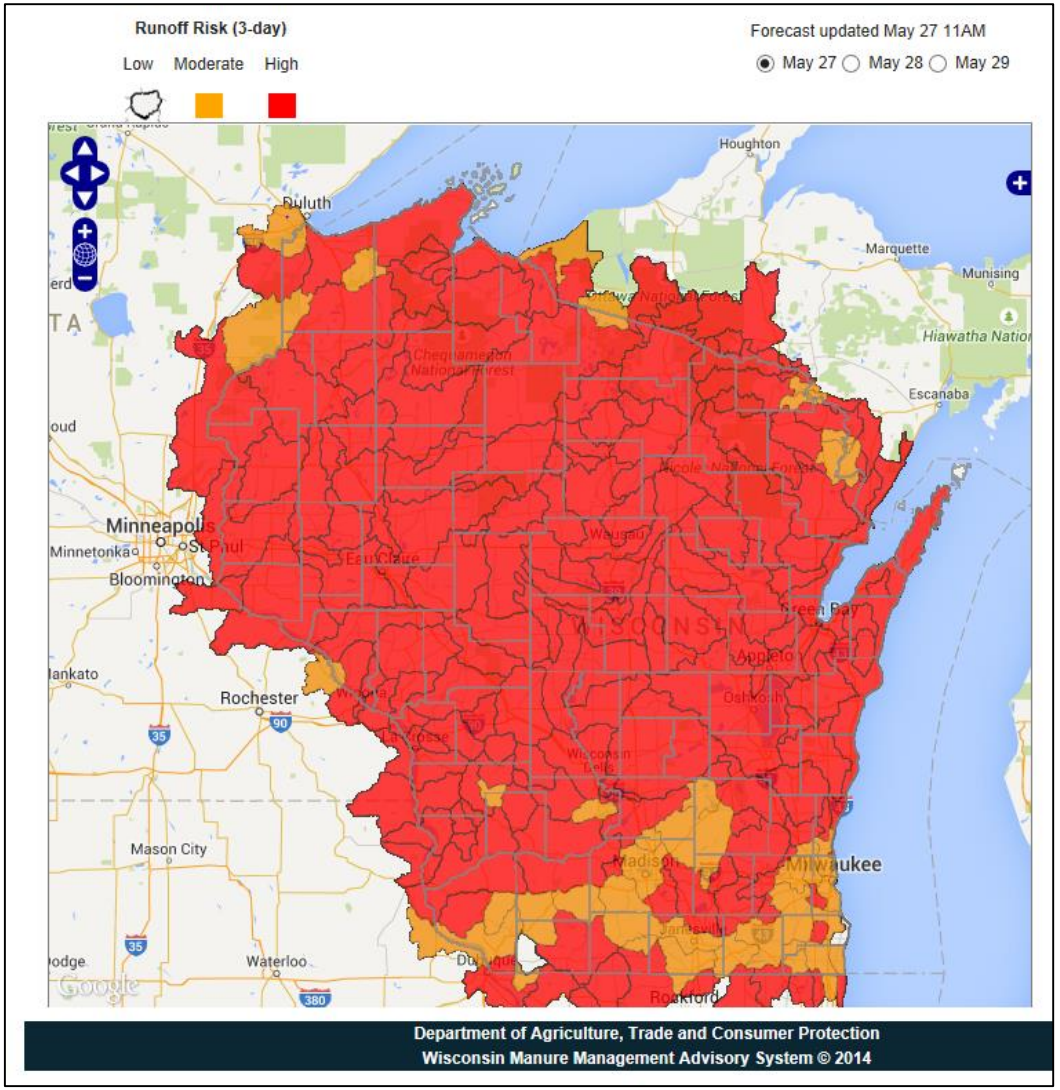
Runoff Risk Advisory Forecast

- A decision making tool, **NOT** a regulatory one
- Predicting the potential for runoff based on:
  - Predicted precipitation and temperature
    - Precipitation out 72 hours
    - Temperature out 10 days

    **Note that manure spread today could still runoff in 4 - 11 days from now.*
  - Modeled soil moisture content
  - Extent of snow cover
  - Modeled snow melt

Current RRAF

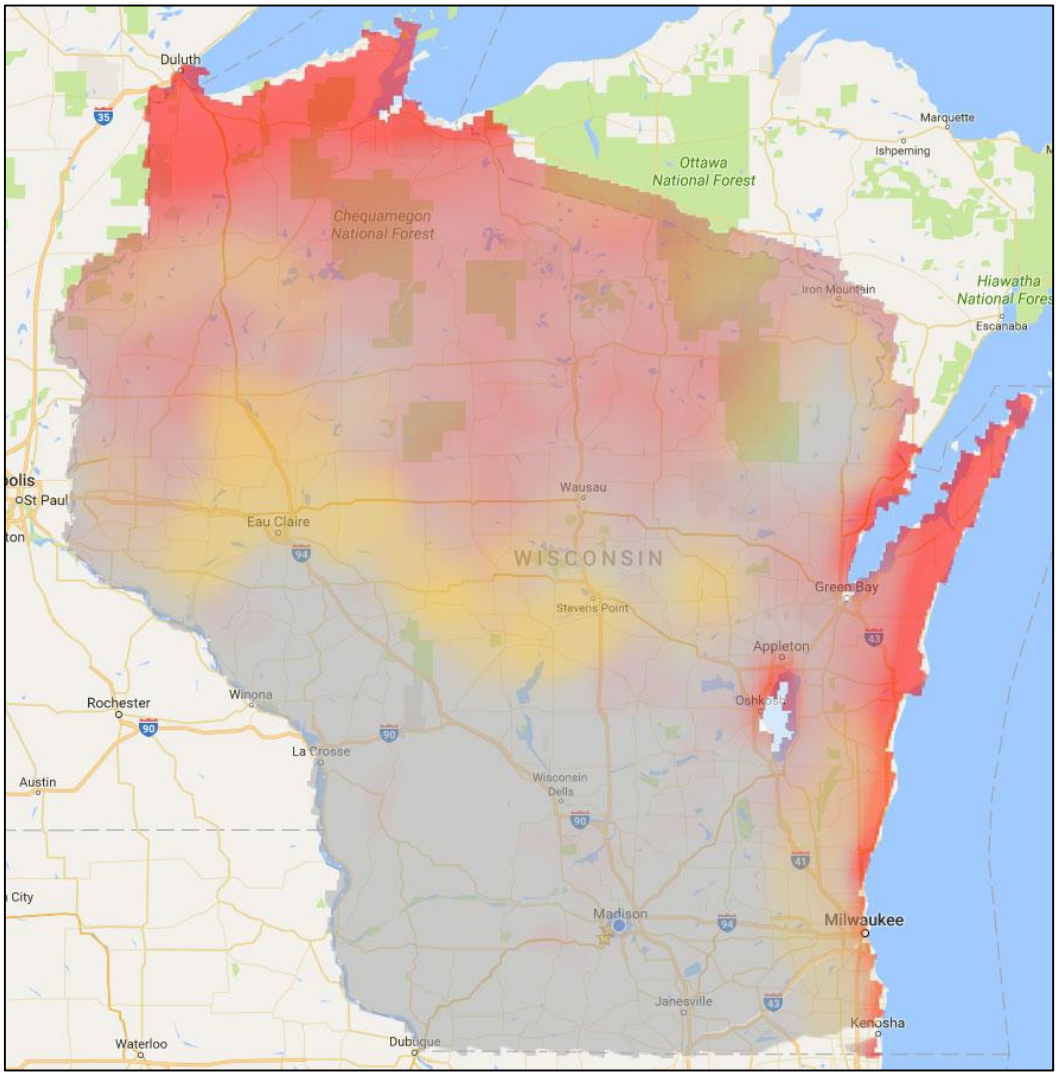
- Runoff Risk Advisory Forecast updated 3x per day
- 216 basins
- Average basin size: 301 square miles



Future RRAF

- Runoff Risk Advisory
  Forecast updated
  1x per day
- 4km x 4km grids

You can help us design the next generation RRAF forecast tool. Please sign up if you'd like to assist by providing feedback on website redesign. Thanks!



Updating ATCP 50 Wis. Admin. Code

2015-590 NM Std.

Provides farm conservation practices for implementing NR 151 Water Quality Performance Standards:

- Funds to county soil and water programs
- Direction for the Farmland Preservation Program

  tax credits to ~13,500 landowners coming into 2016 almost 10,000 Certs. Of Compliance were issued
- Authority for local ordinances requiring soil and water conservation practices – manure storage, livestock siting (ATCP 51), and other local ordinances
- Requirements for NM planners like being competent using the 590 standard, soil testing, crediting nutrients, preparing a plan according to ATCP 50.04(3), and keeping records:

  Like with Livestock Siting ordinances ATCP 50 is proposing to have a planner provide a completed Checklist and have reasonable documentation to substantiate each checklist response and provide it to the department or its agent upon request.

590 Standard and proposed changes

Criteria for surface water and groundwater protection

View current & proposed 590 restrictions at http://snapplus.wisc.edu/maps

- Determine nutrient levels from field soil sampled every 4 years and analyzed by a DATCP certified laboratory. Identify fields, crops, show adequate acreage, and plan applications rates and timing to be consistent with 590 Std. and UWEX Pub. A2809 accounting for ALL **Nitrogen (N), Phosphorus (P2O5), Potassium (K2O)**.
- Limit rescue N applications to 46 lbs. using "Guidelines for Adaptive Nutrient Management" in Tech. Note WI-1 Appendix 3. To justify more N, 2 methods must be used to document the need.
- Do not winter apply **commercial N and P fertilizer**, except on grass pastures & winter grains.
- Gleaning or pasturing animals are allowed in **Surface Water Quality Management Area** and on all slopes in winter while following 590.
- Document methods used to determine applications. Nutrients shall not run off the field during or immediately after application.
- Control soil erosion. Use either P strategy of the **Phosphorus Index** of 6 or less or the **Soil Test P Strategy** when applying manure or organic by-products during the crop rotation of 8 yrs. or less.
- No applications within 50' of direct conduits to groundwater unless deposited by gleaning or pasturing animals or as corn starter fertilizer.
- Do not apply to areas near public water supplies unless manure is treated to substantially eliminate pathogens. Area within 1000' of a **Community potable water well** = 30,000 [0.3%] cropland acres; Or areas within 100' of a **Non-community potable water well** (church, school, and restaurant) = ~ 7,000 [0.1%] cropland acres. *Total Cropland Data Layer 2015, 2014 NASS = 11,866,674 cropland acres*
- Do not apply to areas locally delineated by the Land Conservation Committee or in a conservation plan as areas contributing runoff to direct conduits to groundwater unless manure is substantially buried within 24 hours

590 criteria for groundwater protection

Late summer or fall applications follow A2809 rates from all N sources and 590 requirements for sites vulnerable to N leaching on:

(P) high permeability soils = 1.3 M [11%] cropland acres Use 1 of 3 options to reduce leaching with **spring** fertilizer N.

(R) rock soils with less than 20 inches to bedrock = 235,000 [2%] cropland acres

(W) wet soils with less than 12 inches to apparent water table = 1.5 M [13%] cropland acres

1. **Do not apply Commercial N fertilizer** unless needed for establishment of fall seeded crops or blended commercial fertilizers are needed to meet UWEX Pub. A2809. N rates shall not exceed 36 lbs. N/ac. on = **4.7 M [39%]** cropland acres having:
   - P, R, W soils = 3.1 M [26%] cropland acres
   - Soil depth of 5 feet or less over bedrock = 1.8 M [15%] cropland acres
   - Within **1,000 feet of a community well** = 30,000 [0.3%] cropland acres

2. **Limit rates of manure or organic by-products to not smother crops and**

Use ≤ 120 lbs. available N/acre

P and R soils on all crops, except annual crops. Additionally, manure with ≤ 4% DM wait until after soil temp. < 50°F or Oct. 1 using either a nitrification inhibitor or surface apply and do not incorporate for 3 days.

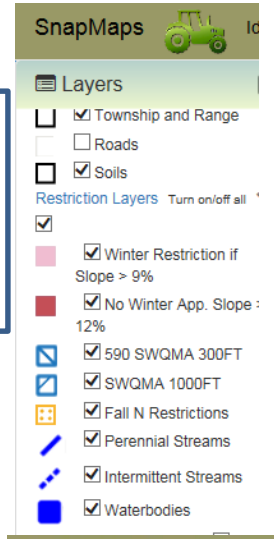
W soils or combination W soils on all crops. Additionally, manure with ≤ 4% DM on all crops use at least one of the following practices:

1. Use a nitrification inhibitor. 2. Apply on an established cover crop, an overwintering annual, or perennial crop. 3. Establish a cover crop within 14 days of application. 4. Surface apply and do not incorporate for at least 3 days. 5. Wait until after soil temp. < 50°F or Oct. 1.

Use ≤ 90 lbs. available N/acre

P and R soils wait until after soil temp. < 50°F or Oct. 1 on annual crops. Additionally, manure with ≤ 4% DM on all crops use either a nitrification inhibitor or surface apply and do not incorporate for 3 days.

W soils or combination W soils ≤ 4% DM on all crops.



590 criteria for surface water protection

Nutrients Applied In Surface Water Quality Management Area (**SWQMA**) 1000' from ponds or lakes = 1.33 M [11%] cropland acres and 300' from rivers or streams = 0.5 M [4%] cropland acres

In fall, spring, summer use 1 or more of the following:

- Effective incorporation within 72 hours of application
- Establish crops prior to, at, or promptly following application
- Install/maintain vegetative buffers or filter strips
- Maintain ≥ 30% cover after nutrient application
- Apply nutrients within 7 days of planting on fields with < 30% cover and have 3 or more consecutive years of no-till *example corn silage*
- In the **SWQMA** or **where subsurface drainage is present** limit mechanical applications of unincorporated liquid manure with 11.0% or less dry matter to 12,000 gals/acre. Sequential applications may be made to meet the nutrient need waiting at least 7 days between applications. Visually monitor accessible tile outlets before, during, and after applications for discharge of liquid manure or organic by-product.

  If a discharge is observed, stop applications.

In winter when frozen or snow-covered soils prevent effective incorporation at application:

- Do not mechanically apply nutrients within the **SWQMA**

590 criteria for surface water and groundwater protection

Farms Mechanically Applying Manure or Organic By-products Must Have a Winter Spreading Plan

Winter = When frozen or snow-covered soils prevent effective incorporation at application.

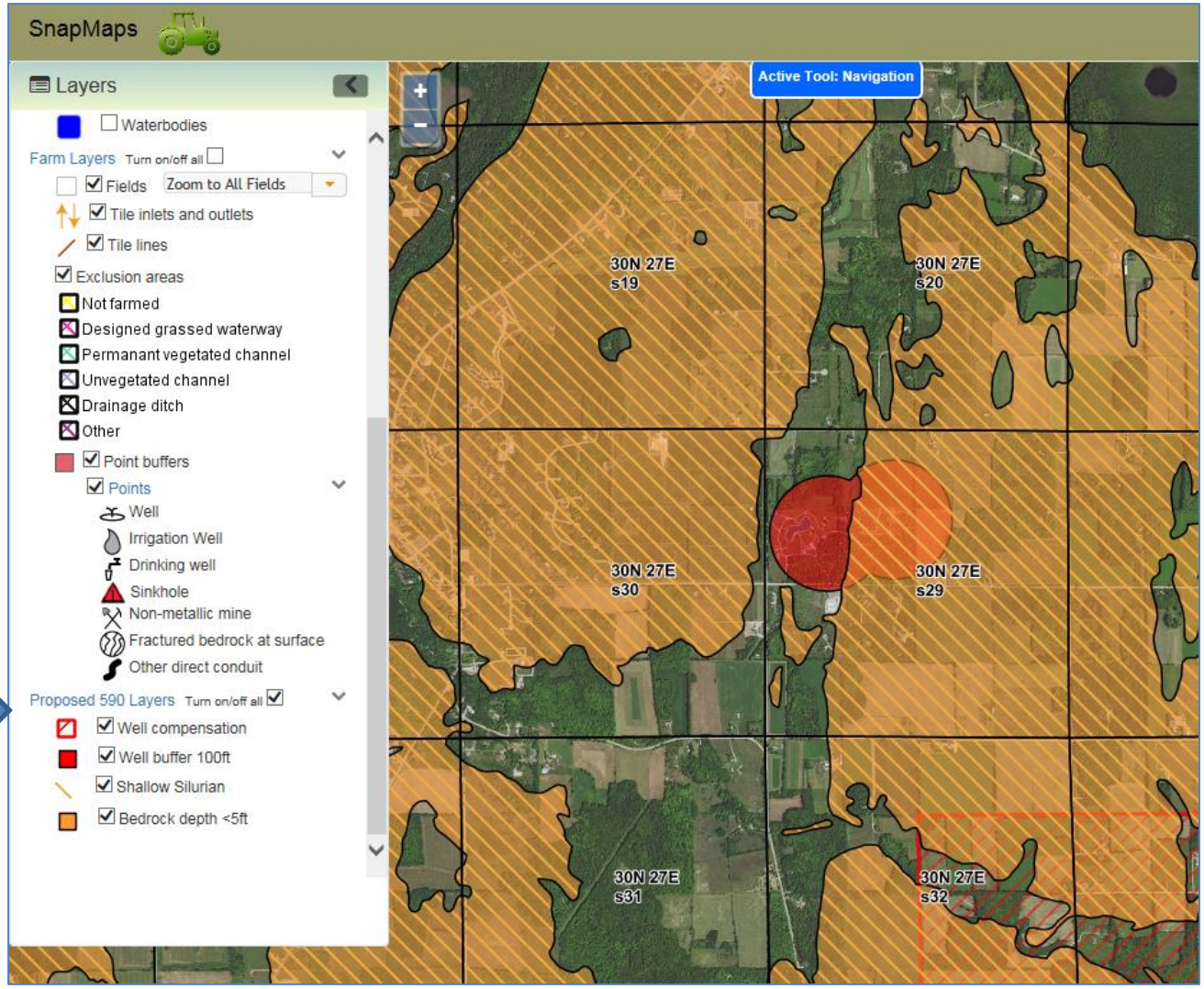
- Amount of manure or organic by-products spread during winter, or generated in 14 days, whichever is greater AND storage capacity for each manure type
- Do not surface apply **liquid manure during February and March** on areas depicted on the 590 spreading restriction maps where either are found:
  1. DNR Well Compensation areas funds provided to replace wells when contaminated with livestock manure = 6,400 [0.1%] cropland acres or
  2. Silurian dolomite within **60 inches** of soils surface = 83,500 [1%] cropland acres.
- Do not apply within **300 feet** of direct conduits to groundwater.
- Do not exceed the P removal of the following growing season's crop. Limit liquid manure applications to 7,000 gal/acre. All winter manure applications are not to exceed 60 lbs. of P_2O_5 per acre.
- Do not apply on **slopes** > 6% (C,D,E,F) = 3.1 M [26%] cropland acres unless the plan documents that no other accessible fields are available for winter spreading AND use 2:
  1. **Contour buffer strips or contour strip cropping;**
  2. **Leave all crop residue and no fall tillage;**
  3. **Apply manure in intermittent strips on no more than 50% of field;**
  4. **Apply manure on no more than 25% of the field during each application waiting a minimum of 14 days between applications;**
  5. **Reduce manure app. rate to 3,500 gal. or 30 lbs. P_2O_5, whichever is less**
- Where concentrated flow channels are present use 2 of the following:
  6. **No manure application within 200 feet of all concentrated flow channels;**
  7. **Fall tillage is on the contour and slopes are lower than 6%; or**
  - **Same 1.- 5. red options above**

Proposed 590 Restrictions

http://snapplus.wisc.edu/maps

1. Search
2. Zoom
3. View

Check the Proposed 590 Layers Box



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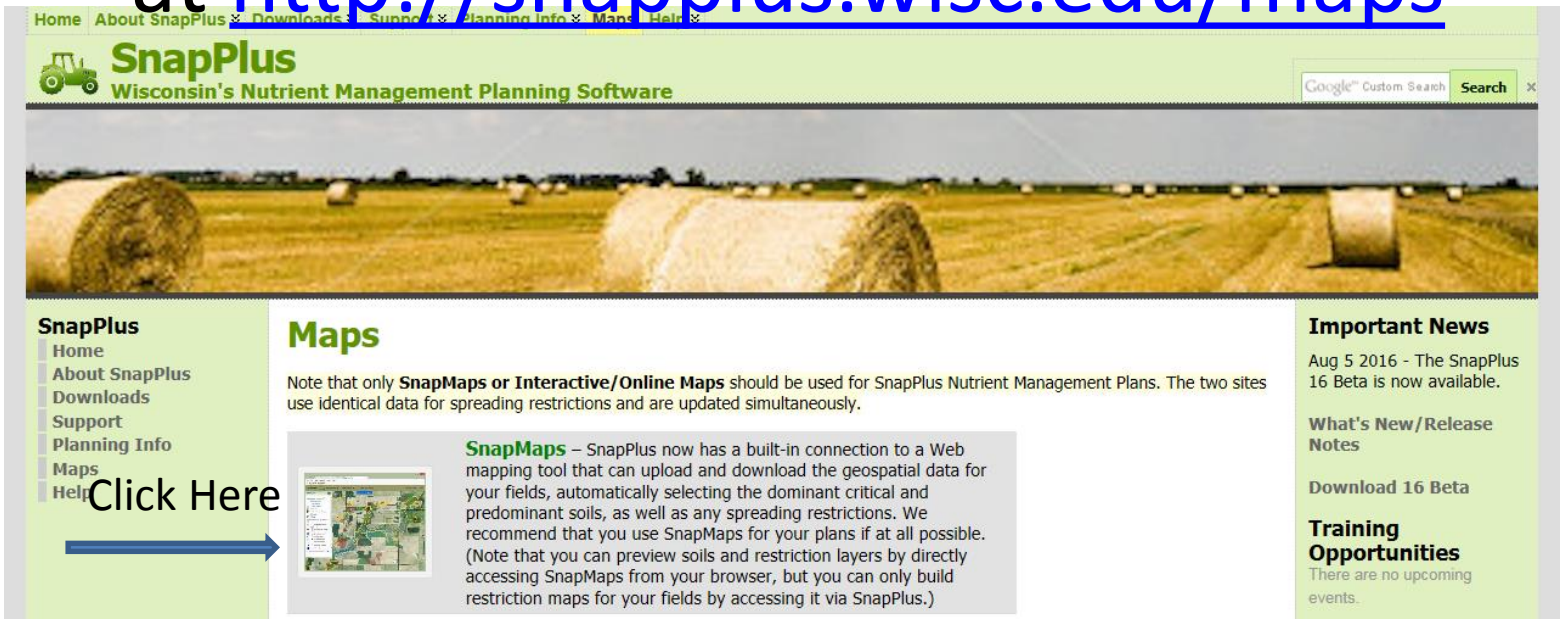

SnapMaps – SnapPlus now has a built-in connection to a Web mapping tool that can upload and download the geospatial data for your fields, automatically selecting the dominant critical and predominant soils, as well as any spreading restrictions. We recommend that you use SnapMaps for your plans if at all possible. (Note that you can preview soils and restriction layers by directly accessing SnapMaps from your browser, but you can only build restriction maps for your fields by accessing it via SnapPlus.)

Fall N Restriction Maps

- Total cropland in WI (11,866,674 acres).
- Cropland Data Layer as the source of cropland acreage data. Grass/pasture was include in the cropland total.
- USDA National Agricultural Statistics Service Cropland Data Layer. 2015. Published crop-specific data layer. Available at https://nassgeodata.gmu.edu/CropScape/ USDA-NASS, Washington, DC.

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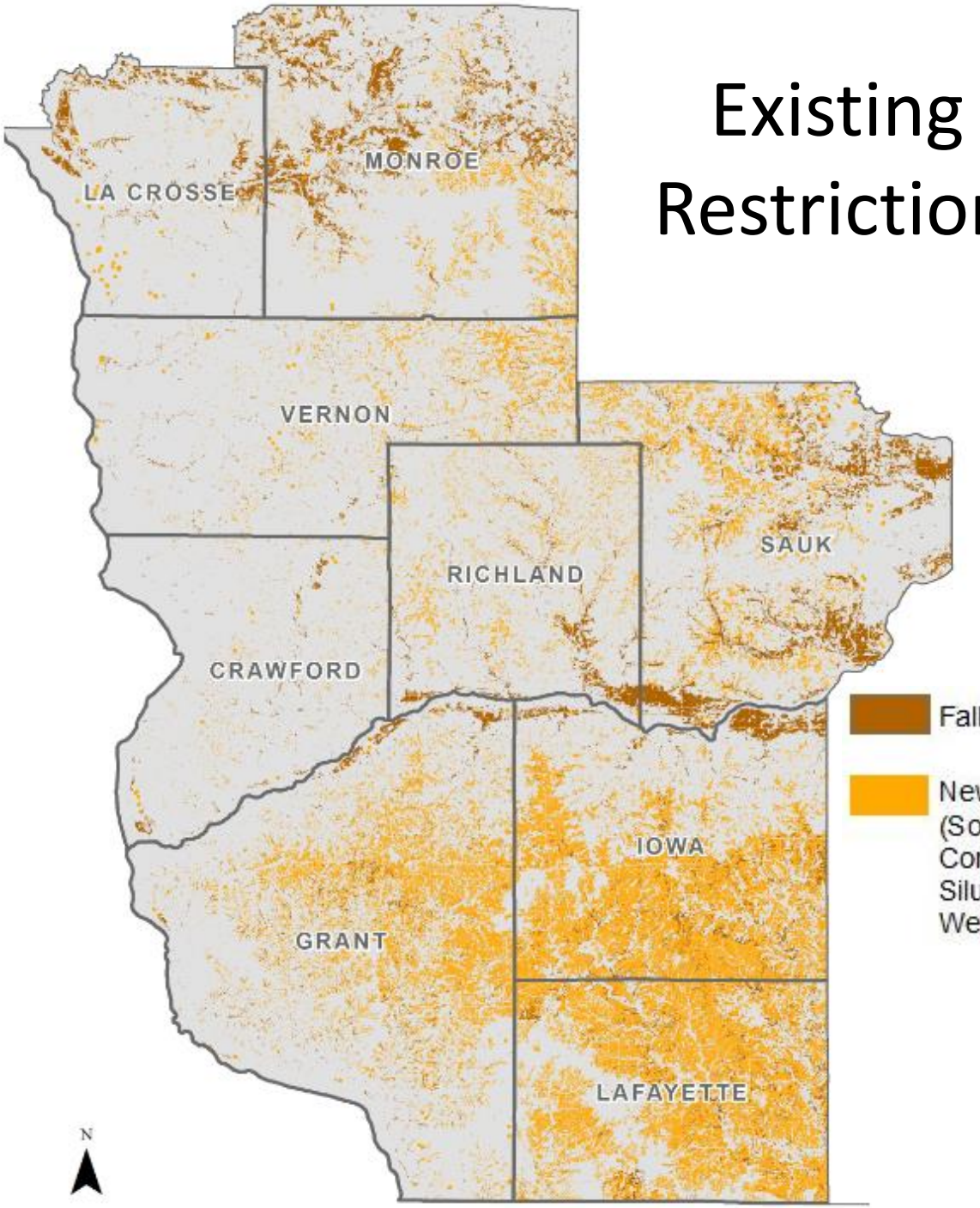
   Soil depth of 5 feet or less over bedrock = 1.8 M [15%] cropland acres
   Within **1,000 feet of a community well** = 30,000 [0.3%] cropland acres
2. **Limit rates of manure or organic by-products to not smother crops and use 120 or 90 lbs. of available N.**

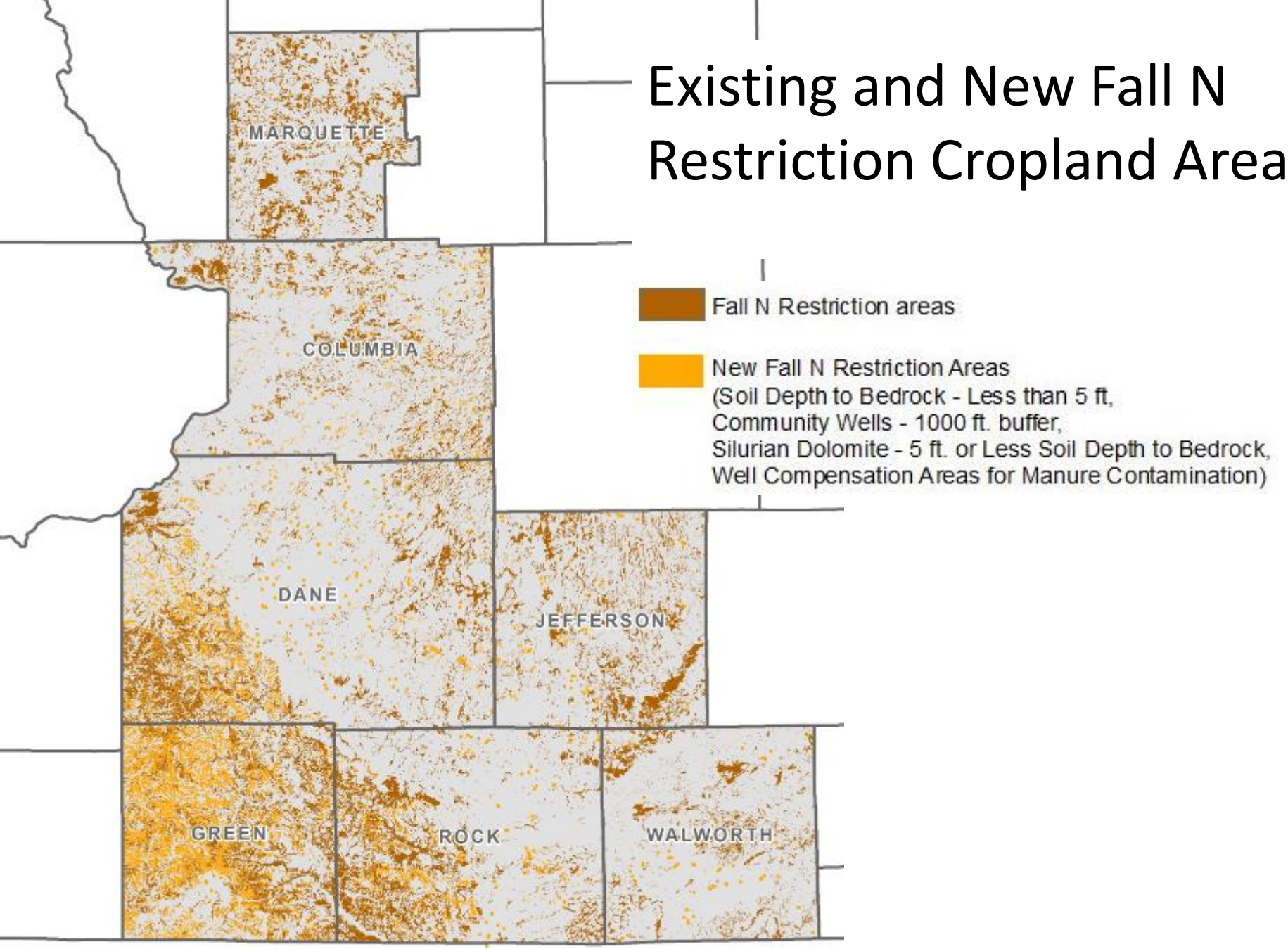
Existing and New Fall N Restriction Cropland Areas

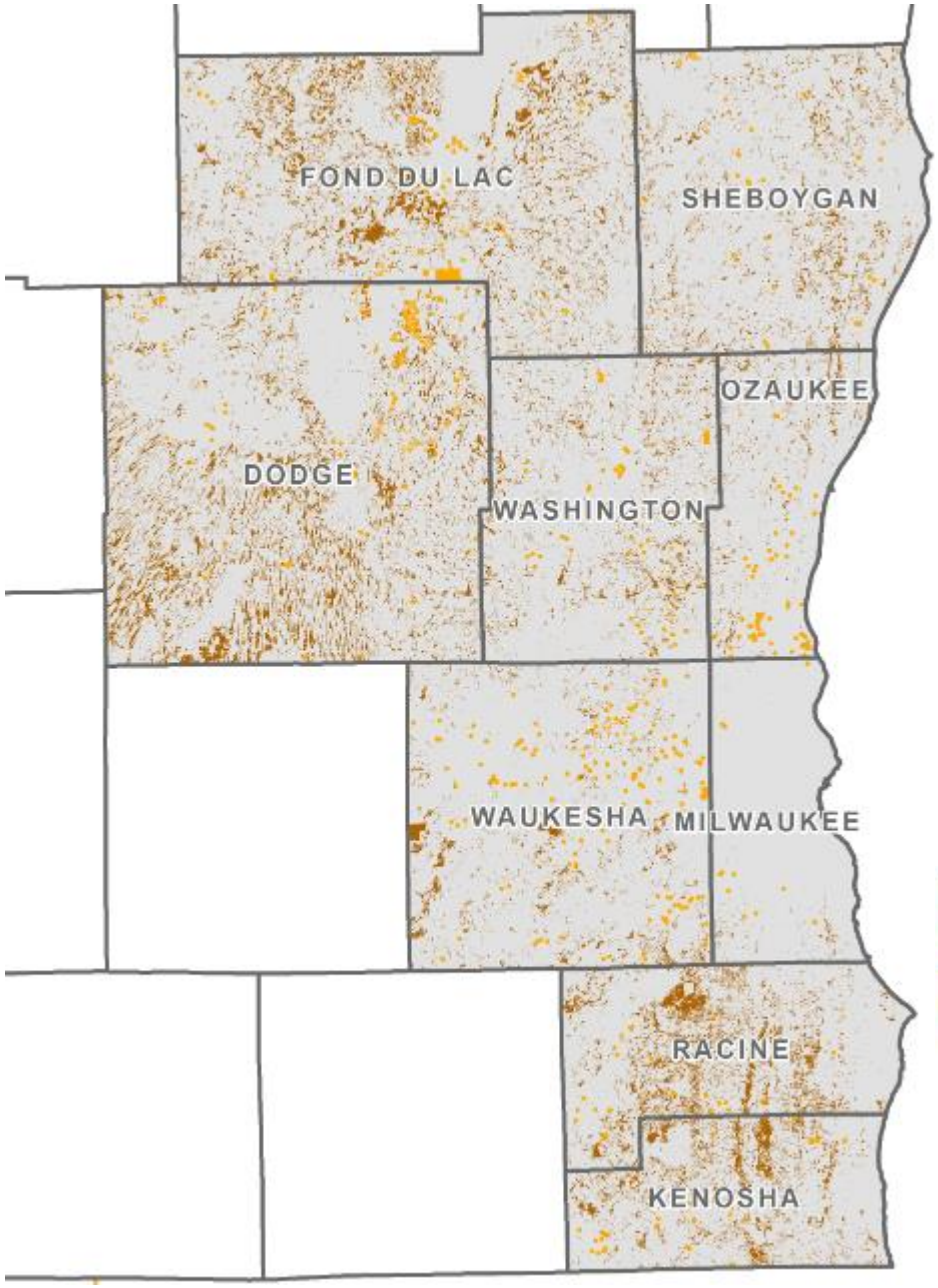


Fall N Restriction areas

New Fall N Restriction Areas
(Soil Depth to Bedrock - Less than 5 ft,
Community Wells - 1000 ft. buffer,
Silurian Dolomite - 5 ft. or Less Soil Depth to Bedrock,
Well Compensation Areas for Manure Contamination)

Existing and New Fall N Restriction Cropland Areas





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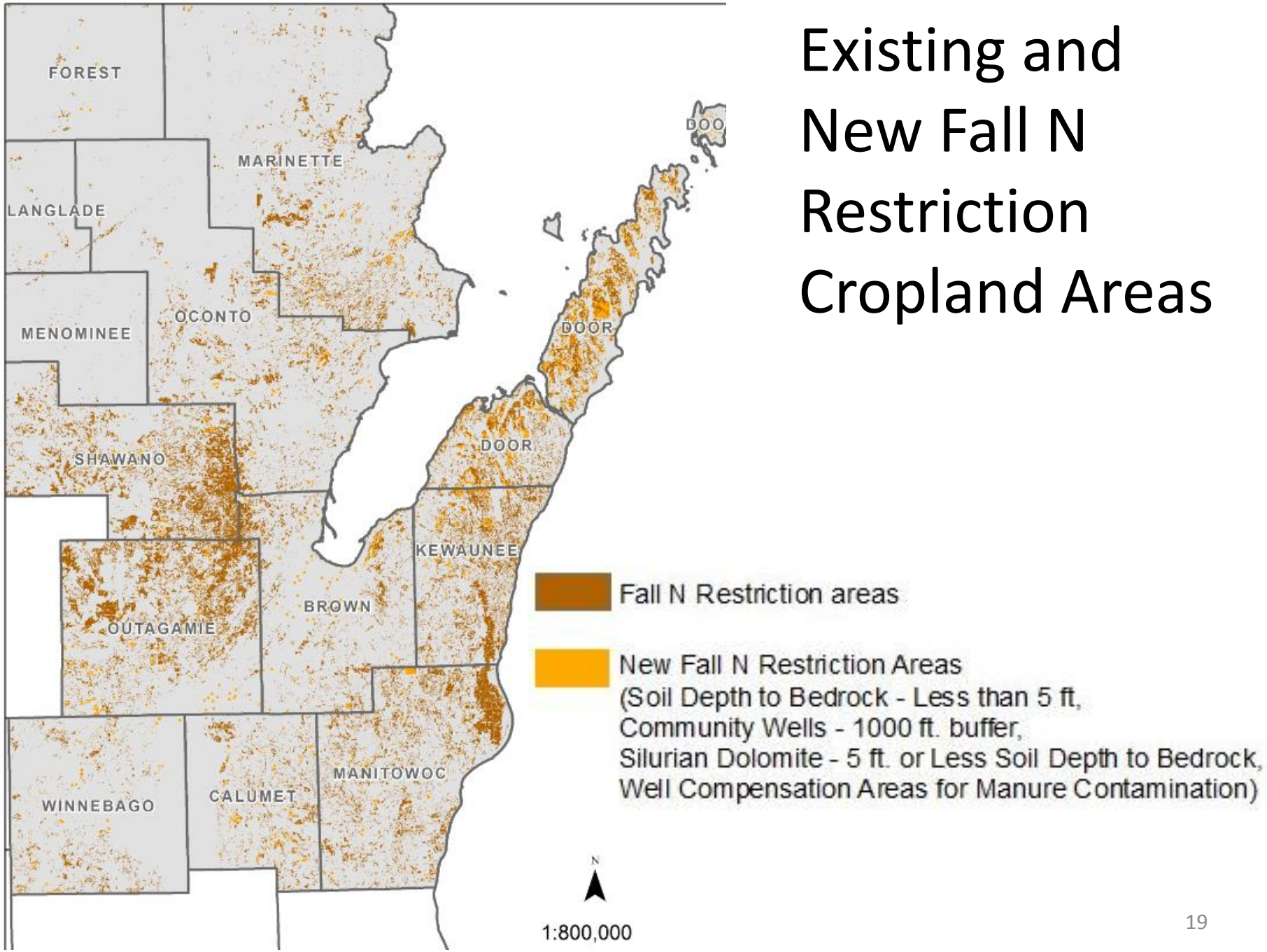

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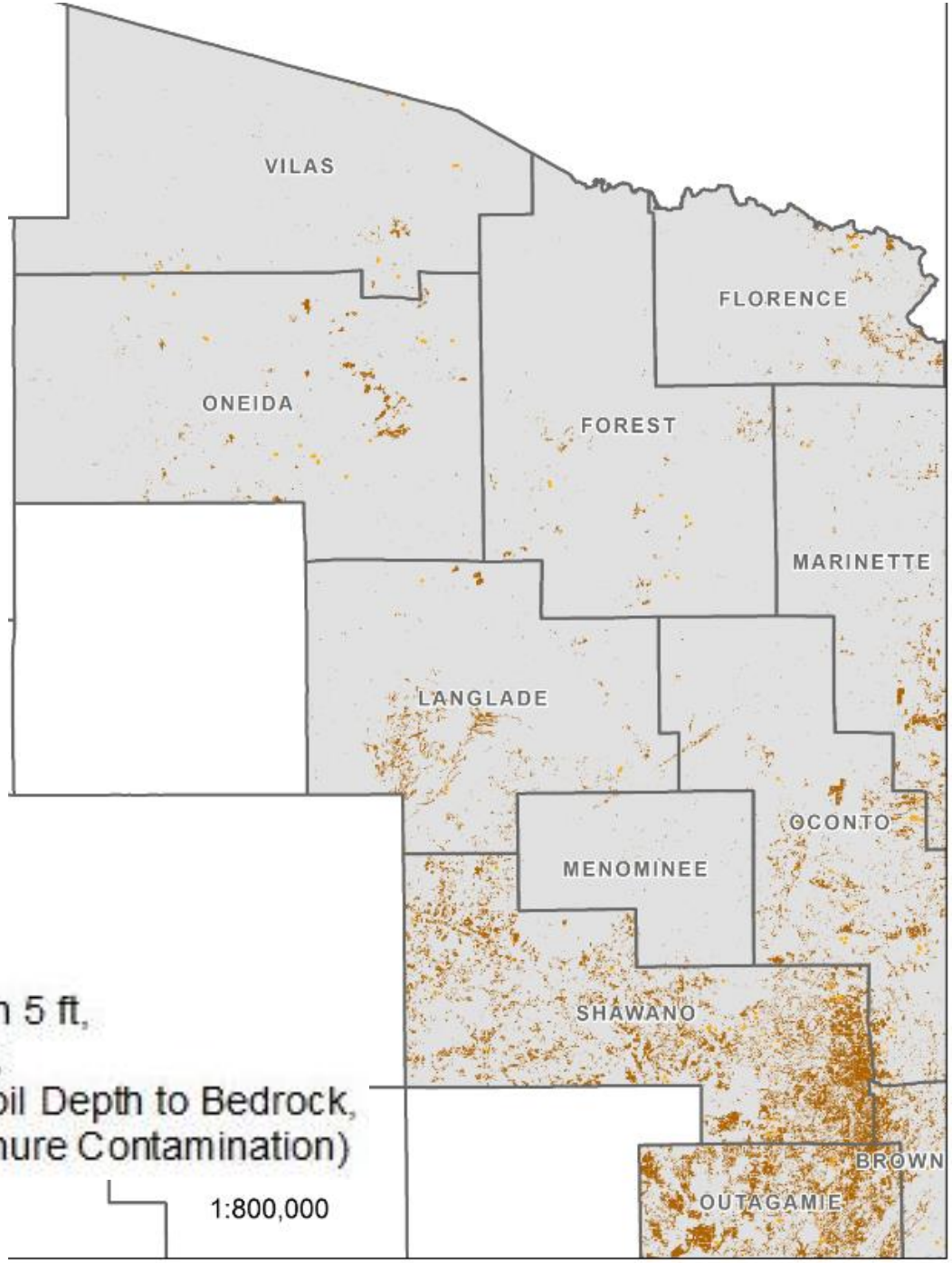

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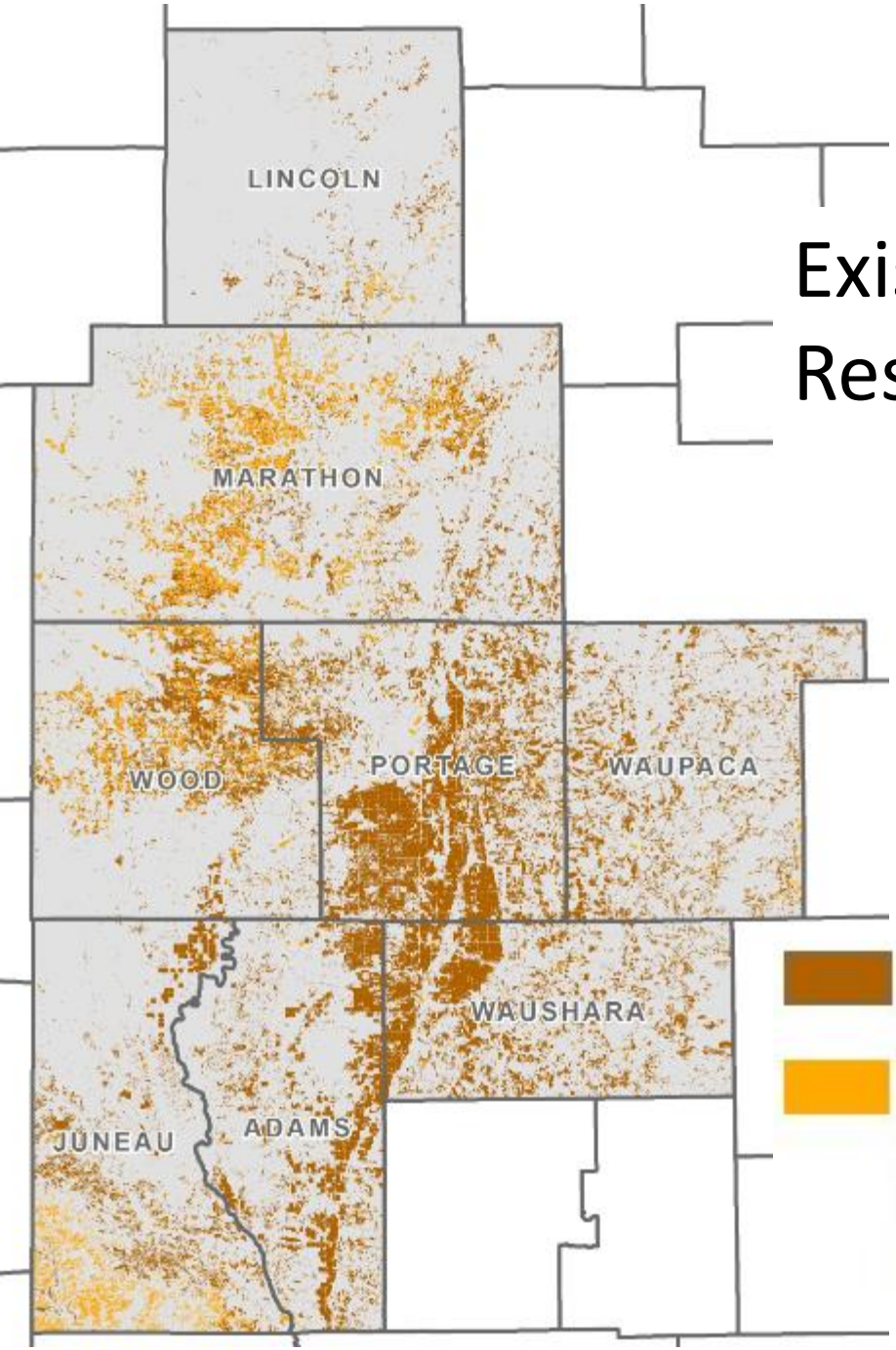

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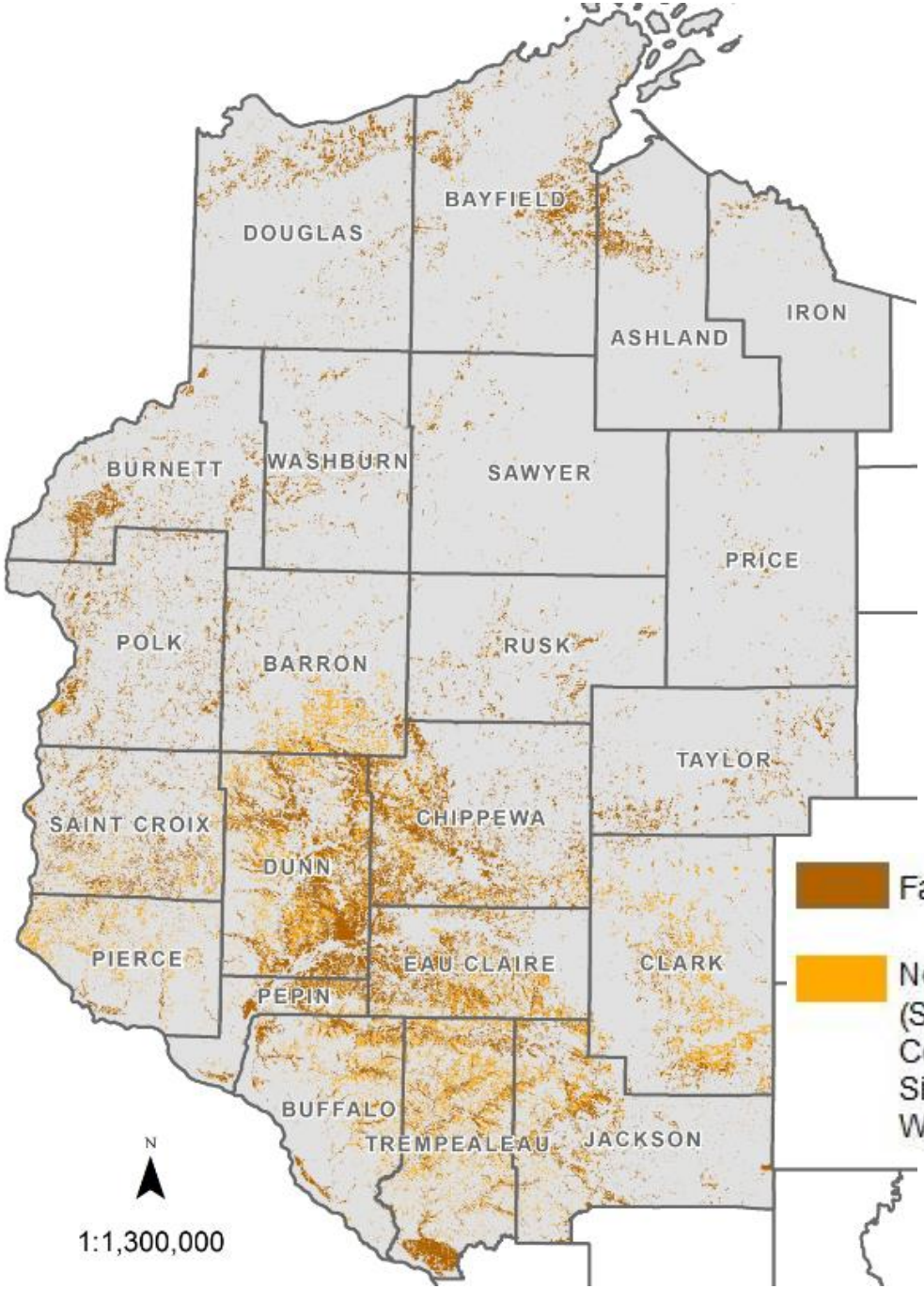

Fall N Restriction areas

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(Soil Depth to Bedrock - Less than 5 ft,
Community Wells - 1000 ft. buffer,
Silurian Dolomite - 5 ft. or Less Soil Depth to Bedrock,
Well Compensation Areas for Manure Contamination)

Important! DATCP's 590 web map will be discontinued by September 20, 2016 and migrated to SnapMaps.

- Unfortunately, your field boundary project files (.gvsp's) will not work in SnapMaps. We recommend exporting your field boundary project files as a shapefile by using the Extract Markup Tool. Please refer to the export directions and the SnapMaps help for importing shapefiles.

- For additional assistance or information, please contact Stephanie.Scheider at 715-832-6547 X113 or stephanie.schneider@wi.gov.

- To receive an email notification of 590 data changes, please subscribe to the DATCP email service. After entering your email address, check **590 Map Updates** from the subscription topic list under the Land and Water Conservation heading.

Nutrient Management Implementation Work Groups Discussion

Things you can do to meet T:

1. Restart the rotation in 2015 and plan forward up to 8 years with tillage and crops they can use.
2. With alfalfa after 3 years use the crop “alfalfa grassy 3 yrs plus” because it does get grassy and controls more erosion. SnapPlus “alfalfa” means pure stand of alfalfa with no grass.
3. Try no-tilling the first crop after alfalfa, it usually helps.
4. Try to get use at least one less tillage pass than usual.
5. Surface apply manure.
6. No-till corn and soybeans.
7. Stop growing soybeans on fields with low T.
8. Contour when you can.
9. Maintaining good pastures can be a good option for some farms.
10. Double crop corn silage and winter rye with as little tillage as possible.